US Army Corps of Engineers®
Engineer Research and Development Center

Cold Regions Science and Technology Information Analysis Center (CRSTIAC)

Purpose

The Cold Regions Science and Technology Information Analysis Center (CRSTIAC), located at the Engineer Research and Development Center's Cold Regions Research and Engineering Laboratory (ERDC-CRREL) in Hanover, New Hampshire, serves as the nation's corporate repository for data generated within the areas of cold regions science and engineering. CRSTIAC's mission is to gather, process, analyze, and disseminate the world's most comprehensive collection of cold regions knowledge.

Specifications

CRSTIAC's library holds more than 19,000 monographs, 175,000 reports, 150,000 micrographic items, historic archives, a comprehensive map collection, and a real and virtual collection of journals. Extensive on-line literature searches are routinely conducted utilizing databases such as Compendix, Science Citation, and Internet searches.

The CRSTIAC at ERDC-CRREL maintains a wealth of technical data regarding arctic construction, behavior of permafrost, environmental impacts, and numerous other cold regions science and engineering topics.

Under CRREL's sponsorship, the *Bibliography of Cold Regions Science and Technology* is prepared annually by the American Geological Institute. Vital to the CRSTIAC task, it covers publications in the fields of civil, mechanical, and environmental engineering, and most of the earth, ocean, and atmospheric sciences. The collection lists journal articles, monographs, technical reports, theses, and patents derived from private, academic, and

government sources. Because of geography, more than half of the 268,300 citations in the *Bibliography* are of foreign origin. Updates are posted monthly.

Benefits

CRSTIAC receives more than 3,000 requests for information each year. Rapid, in-depth response means timely transfer of new technology and avoidance of duplicated research.

The reply to a typical inquiry usually begins with an extensive literature and database search. This is followed by assessment and analysis by technical experts to identify further conventional sources of information, nonstandard sources, gaps in knowledge, forecasts, and key organizations. If needed, full bibliographic compilations and executive summary reports are then prepared and delivered in both printed and magnetic media form.

The CRSTIAC task includes preparation of many technical documents each year: research and experimental engineering reports; state-of-the-art review papers and monographs; and other, often very specialized publications. Today, information is disseminated both through conventional publishing in print media and via digital electronic means, e.g., DVDs. More than a thousand military, civilian, and foreign organizations and people access new technical reports as they are made available in full text via the Web.

Editorial support is provided for both in-house and external technical conferences and symposia, including the publication of proceedings volumes that summarize current knowledge in a specific field.

CRSTIAC's appraisal of each topic, implemented through modern information retrieval techniques coupled with analysis by subject matter experts, puts the best available knowledge to work to serve the interests of both nations and the world. Decisions can be made that take into account national strategic concerns, enhancement of international relations, and private industry interests.

Success Stories

Over the years, CRSTIAC has become a valuable source of professional editorial advisory and hands-on publications production services for those seeking technical communication expertise complemented by knowledge of the field of cold regions research.

- The importance of the DoD Information Analysis Center program can be seen in CRSTIAC's analysis and assessment of information on two cold regions topics:
  1. Cold water, deep draft navigation via subarctic and arctic Alaskan waters and the Russian Northern Sea Route for shipment of products between North America and Europe;
  2. The state of Russian technology and techniques for building, operating, and maintaining arctic natural gas and liquid petroleum pipelines.

- The Northern Sea Route study furnished information on sources of meteorological and oceanographic data, including sea conditions, ice extent, and other environmental information. The history of commercial shipping was studied, deep-draft icebreaking technology was surveyed, Russian ice forecasting was assessed, and a preliminary analysis of the operation was performed.

- The pipeline study covered location, routing, design, construction, and maintenance. Databases were assembled on environmental conditions in eastern and western Siberia that affect the ability to deliver natural gas and petroleum via pipelines. A preliminary analysis was made of Russian pipeline operations, and existing pipelines were charted.

Point of Contact

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